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EXAMINER

BAKER, STEPHEN M

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 09/22/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/894,189

Applicant(s)

STIEGER, RONALD D.

Examin r

Stephen M. Baker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____ .
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____ .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-12, 14-22 and 25-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1: in lines 3-4, "to output" apparently should be "outputs"; in line 7, "to transmit" apparently should be "transmits"; in line 12, "to decode" apparently should be "decodes".

In claim 2: in line 2, "to provide" apparently should be "provides".

In claim 4: in line 1, "to provide" apparently should be "provides".

In claim 5: in line 1, "to further provide" apparently should be "further provides".

In claim 6: in line 1, "to further select" apparently should be "further selects".

In claim 7: in line 3, "to provide" apparently should be "provides"; in line 6, "to use" apparently should be "uses".

In claim 9: in line 1, "to further provide" apparently should be "further provides".

In claim 10: the phrase "tone modulation" is vague and apparently should be "a single frequency tone waveform" (see page 12, lines 6-8 and "Laser Communications in Space", Lambert, p. 63, last line).

In claim 14: in line 2, "to provide" apparently should be "provides".

In claim 16: in line 1, "to provide" apparently should be "provides".

In claim 17: in line 1, "to further provide" apparently should be "further provides".

In claim 19: in line 5, "to use" apparently should be "uses".

In claim 21: in line 1, "to further provide" apparently should be "further provides".

In claim 22: the phrase "tone modulation" is vague and apparently should be "a single frequency tone waveform".

In claim 25: in line 3, "to output" apparently should be "outputs"; in line 8, "to transmit" apparently should be "transmits"; in line 12, "to decode" apparently should be "decodes".

In claim 26: in line 2, "to provide" apparently should be "provides".

In claim 28: in line 1, "to provide" apparently should be "provides".

In claim 30: in lines 1-2, "to further select" apparently should be "further selects".

In claim 31: in lines 1-2, "to further provide" apparently should be "further provides".

In claim 32: the phrase "tone modulation" is vague and apparently should be "a single frequency tone waveform".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7, 11-19, 23, 24, 35-37, 39-42 and 44 are rejected under 35

U.S.C. 102(a) as being anticipated by U.S. Patent No. 6,154,489 to Kleider *et al*

(hereafter Kleider).

Kleider discloses adaptive forward error correction for an image transmission system that may be implemented on a laser optical communication link (col. 6, lines 47-48), for which the modulator and antenna (113, 102) in Kleider's "optical transmitter" (101) would of course take the form of a "laser/driver unit" and the antenna and demodulator in Kleider's "optical receiver" (103) would of course take the form of an "optical detector/amplifier". Kleider shows an adaptive "error correction encoder" (111) for generating an "error correction code selected from a predetermined set of error correction codes having differing data transfer rates" (col. 6, lines 56-61). Kleider's optical link transmitter would send "optical signals modulated with data from the error correction encoder" to be decoded by an "error correction decoder" (119) for decoding data "according to the error correction code selected in the error correction encoder".

Regarding claims 2-6, 14-18 and 26-30, Kleider also provides an "error rate indicator" (127) that, in a laser link embodiment, would of course provide "an indication of a power level of the *optical* signal received" (col. 3, lines 54-59, col. 7, lines 38-50, col. 14, lines 9-18, col. 15, lines 20-30) to be provided to the optical transmitter, via a

feedback loop (127-115) that involves "synchronization units" to be used for selecting the most suitable degree of error correction coding.

Regarding claims 11, 23, 36 and 41, Kleider further discloses using no error correction coding when the channel permits (col. 3, lines 36-39).

Regarding claims 12 and 24, Kleider's error rate indication can also involve output from the error correction decoder (col. 3, lines 20-23).

5. Claims 1-10, 13-22, 25-32, 35, 38-40, 43 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,611,795 to Cooper (hereafter Cooper).

Cooper discloses adaptive forward error correction for a multimedia transmission system that may be implemented entirely on a laser optical communication link (col. 4, line 23) which of course would require an "optical transmitter" in the form of a "laser/driver unit" and an "optical receiver" in the form of an "optical detector/amplifier". Cooper requires (col. 5, line 18) an adaptive "error correction encoder" for generating an "error correction code selected from a predetermined set of error correction codes having differing data transfer rates" (col. 7, lines 50-60). Cooper's optical link-only transmitter embodiment would of course send "optical signals modulated with data from the error correction encoder" to be decoded by an "error correction decoder" (146) for decoding data "according to the error correction code selected in the error correction encoder".

Regarding claims 2-6, 14-18 and 26-30, Cooper also provides an "error rate indicator" (col. 8, line 53 to col. 9, line 38) that, in a laser link embodiment, would of

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course provide "an indication of a power level of the *optical* signal received". The "error rate indicator" supports exchange of modified error correction configuration parameters (col. 6, lines 21-26) to be provided to the optical transmitter, forming a feedback loop that of course involves "synchronization units" to be used for selecting the most suitable degree of error correction coding.

Regarding claims 8, 9, 20, 21 and 25-31, for a link that is exclusively optical fiber, rather than a hybrid network (col. 4, lines 19-25), Cooper's parameter exchange system (col. 6, lines 21-26) requires optical transceivers.

Regarding claims 10, 22 and 32, Cooper discloses communication with a modulated carrier wave, providing a "tone modulation".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper.

Cooper does not specify implementing the adaptive FEC coding logic by using FPGA logic. Official Notice is given that the ease of implementing fast adaptive logic by using FPGA logic was well known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was

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made to implement Cooper's adaptive FEC code logic by using FPGA logic. Such an implementation would have been obvious because, as stated above, the ease of implementing fast adaptive logic by using FPGA logic was already well known.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (703) 305-9681. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.



Stephen M. Baker
Primary Examiner
Art Unit 2133

smb